



DP751 Series
Solar Powered Thermometers
Operator's Manual: M1499/0995



DESCRIPTION

The OMEGA® DP751 Solar Powered Thermometers are excellent for outdoor applications where AC power is not available and wide ambient operating temperature is required. Using a 3 volt solar cell the DP751 will operate with as little as 35 lux (a comfortably lit desk is about 300 lux.) The ability to operate in temperatures as low as -35°F, allows the user to monitor temperatures of pipelines in remote sites. Other applications include walk-in refrigerators/freezers and photographic apparatus. Since it is self-powered, the DP751 thermometers can also be used near hot tubs and pools where electrical safety is a concern.

The following models are available from OMEGA Engineering, Inc.

<u>PART NUMBER</u>	<u>DESCRIPTION OF SOLAR POWERED THERMOMETERS</u>
DP751F-(*)-SLR-FL	2.25" Square LCD, Range of -58° to 158°F, Resolution of 1°F
DP751C-(*)-SLR-FL	2.25" Square LCD, Range of -50° to 70°C, Resolution of 1°C

NOTE: * specify 36 or 96 inches for cable length. Special lengths are available.
The thermistor and cable are calibrated and matched to the display. The probes are not interchangeable.

UNPACKING

Remove the Packing List and verify that all equipment has been received. If there are any questions about the shipment, please call the OMEGA Customer Service Department.

Upon receipt of shipment, inspect the container and equipment for signs of damage. Take particular note of any evidence of rough handling in transit. Immediately report any damage to the shipping agent.

NOTE

The carrier will not honor any claims unless all shipping material is saved for their examination. After examining and removing contents, save packing material and carton in the event reshipment is necessary.

Make sure the thermometer, part number label, and manual are in the shipping box.

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INSTALLATION

(FRONT FLANGE MOUNTING IN A PANEL, OR WALK-IN COOLER)

1. Exterior panel hole size to be round 2-1/8" diameter with minimum depth of 1".
2. Interior hole to be a minimum of 5/16" (sensor is 1/4" diameter).
3. Push sensor probe through hole from the exterior and take up slack from the interior.
4. Place the thermometer in position on the exterior and secure with minimum of two #6 pan head screws (self tapping) installed diagonally (upper right/lower left). Be careful not to overtighten.
5. Secure probe and sensor wire. Use sealant to fill in interior hole.
6. Clean the temperature display (LCD) and solar panel before securing protective part number mask.
7. Peel off backing on protective part number mask and secure on front of unit being sure to press on all around to seal the mask to the case.

(U-CLAMP MOUNTING IN A PANEL)

1. Exterior panel hole size to be round 2-1/8" diameter.
2. Push sensor probe through hole from the exterior and take up slack from the interior.
3. Place the thermometer in position on the exterior and secure using U-Clamp and two thumb screws supplied. Be careful not to overtighten.
4. Secure probe and sensor wire with clips (not supplied). Use sealant to fill in interior hole.
5. Clean the temperature display (LCD) and solar panel before securing protective part number mask.
6. Peel off backing on protective part number mask and secure on front of unit being sure to press on all around to seal the mask to the case.

CALIBRATION PROCEDURE

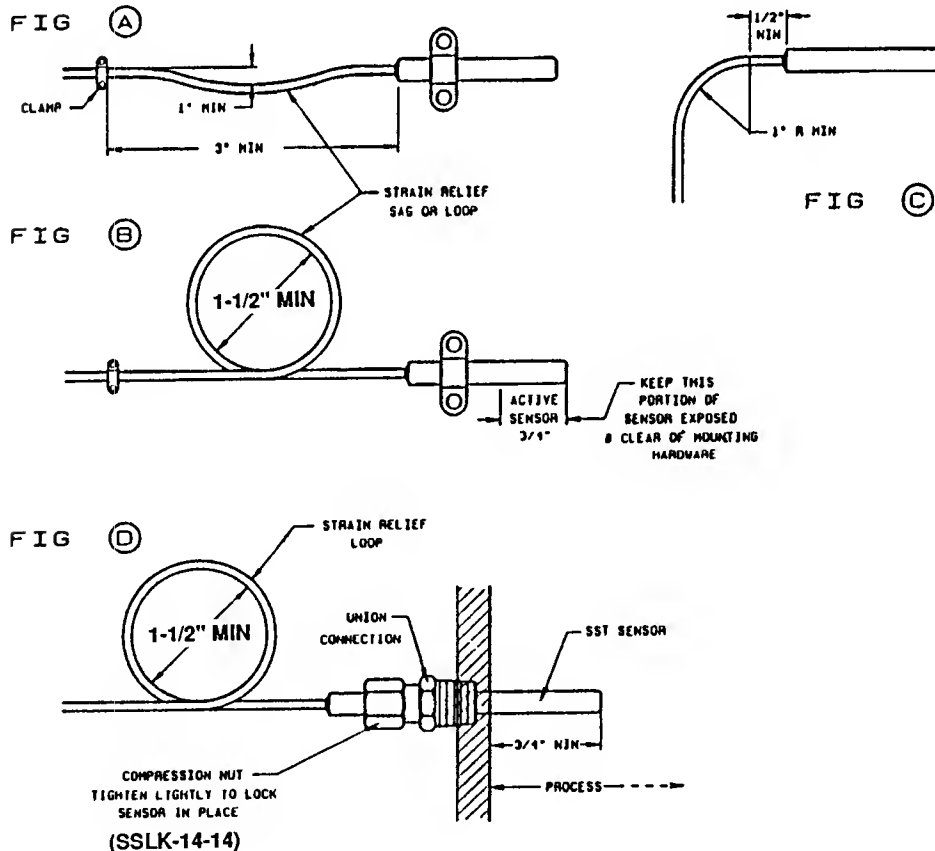
1. Note each unit is factory calibrated and a glyptol color coded seal is placed on the calibration potentiometer to prevent calibration shift. The color represents the date of manufacturing.
2. Immerse the sensor in a known temperature circulated liquid bath, using a mercury glass thermometer to obtain the right temperature, or have a mixture of water and crushed ice (slush) to obtain 32°F (0°C).

3. To re-calibrate the thermometer, use a small phillips head screwdriver to adjust the potentiometer on the back of the DP751. Turn clockwise to adjust down and counter-clockwise to adjust up. Keep in mind the 10 second update time when making adjustments. To re-seal the potentiometer, you may use clear nail polish.

SENSOR MOUNTING DIRECTIONS

Mount the sensor and its lead wire to minimize or eliminate stress due to differential expansion and mechanical strain. The following is suggested:

- NOTES:
1. Do not crimp, cut, or expose sensor lead wire.
 2. Minimum bending radius for sensor wire = 1"
 3. Always leave slack between sensor and wire mounting brackets.
 4. Where a sharp bend is necessary or repeated bending (on door) will take place, use a strain-relief loop, as shown in Figures B and D.
 5. Do not place a bend at the sensor, see Figure C.



SPECIFICATIONS

SENSOR:	Thermistor 0.25" OD, 1.8" long stainless steel probe with 36" or 96" of lead wire . $\Omega = 50 \text{ K ohms}$	
POWER:	3V solar cell	ACCURACY: $\pm 2.0^\circ\text{F}$
AMBIENT OPERATING RANGE:	-35° to 160°F (-30° to 72°C)	UPDATE TIME: 10 seconds
LUX RATING:	35 Lux minimum	DISPLAY: 0.375" LCD
SOLAR CELL LIFE:	approx. 15 years	PANEL CUTOFF: 2.04" diameter
DIMENSIONS:	2.25" x 2.25" x 0.78" deep (57.2 x 57.2 x 19.8 mm)	
MOUNTING:	U-clamp standard	
TEMPERATURE RANGE AND RESOLUTION:	DP751F model: -58° to 158°F // Resolution of 1°F DP751C model: -50° to 70°C // Resolution of 1°C	
WEIGHT:	1.69 oz (48 gm)	



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WARRANTY

OMEGA warrants this unit to be free of defects in materials and workmanship and to give satisfactory service for a period of 13 months from date of purchase. OMEGA Warranty adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product. If the unit should malfunction, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective it will be repaired or replaced at no charge. However, this WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear or which are damaged by misuse are not warranted. These include contact points, fuses, and triacs.

OMEGA is glad to offer suggestions on the use of its various products. Nevertheless, OMEGA only warrants that the parts manufactured by it will be as specified and free of defects.

OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED.

LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

Every precaution for accuracy has been taken in the preparation of this manual; however, OMEGA ENGINEERING, INC. neither assumes responsibility for any omissions or errors that may appear nor assumes liability for any damages that result from the use of the products in accordance with the information contained in the manual.

SPECIAL CONDITION: Should this equipment be used in or with any nuclear installation or activity, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the equipment in such a manner.

RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA ENGINEERING Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

FOR WARRANTY RETURNS, please have the following information available BEFORE contacting OMEGA:

1. P.O. number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problem relative to the product.

FOR NON-WARRANTY REPAIRS OR CALIBRATION, consult OMEGA for current repair/calibration charges. Have the following information available BEFORE contacting OMEGA:

1. P.O. number to cover the COST of the repair/calibration,
2. Model and serial number of product, and
3. Repair instructions and/or specific problems relative to the product.

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